Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An optical signal processing device ~~equipped with~~comprising:

a source of electromagnetic radiation of variable intensity,

an optical component, the optical component comprising at least one photoluminescent carbon nanotube configured to emit light at wavelengths varying non-linearly with the intensity of said light, and ~~further comprising~~

a ~~means of detecting~~detector of electromagnetic radiation, wherein the source of electromagnetic radiation, the at least one photoluminescent carbon nanotube and the detector are together configured to perform an optical signal processing operation of the optical signal processing device.

2. (Previously presented) The optical signal processing device of claim 1, wherein the optical component comprises a

substrate and a layer having a number of photoluminescent carbon nanotubes.

3. (Currently amended) The optical signal processing device of claim 2, wherein the non-linear optical component further comprises an intermediate layer between the substrate and the layer having a number of photoluminescent carbon nanotubes.

4. (Previously presented) The optical signal processing device of claim 1, wherein the electromagnetic radiation is monochromatic coherent laser light.

5. (Currently amended) An optical signal processing component having at least one photoluminescent carbon nanotube configured to emit light at wavelengths varying non-linearly with the intensity of said light, wherein the at least one photoluminescent carbon nanotube is configured to perform an optical signal processing operation.

6. (Currently amended) The optical signal processing component of claim 5, wherein the carbon nanotube has a thin film coating.

7. (Currently amended) The optical signal processing component of claim 5, wherein the carbon nanotube is embedded in a non-oxidizing matrix.

8. (Currently amended) The optical signal processing component of claim 5, wherein the carbon nanotube is embedded in a non-oxidizing matrix, which is transparent for electromagnetic radiation.

9. (Currently amended) The optical signal processing component of claim 5, wherein the carbon nanotube is embedded in a non-oxidizing, flexible matrix.

10. (Currently amended) The optical signal processing component of claim 5, wherein the at least one photoluminescent carbon nanotube emits light at wavelengths over the range from 600 to 700 nm.

11. (Currently amended) The optical signal processing component of claim 10, wherein the wavelength varying non-linearly with the

intensity of said light reaches a highest maximum at a wavelength in the range from ~~600 to 800 nm~~600 to 700 nm.

12. (Currently amended) The optical signal processing ~~device~~component of claim 11, wherein the wavelength varying non-linearly with the intensity of said light reaches ~~a~~ the highest maximum at a wavelength in the range from ~~600 to 700 nm~~660 to 690 nm.

13. (Previously presented) The optical signal processing device of claim 1, wherein the at least one photoluminescent carbon nanotube emits light at wavelengths over the range from 600 to 700 nm.

14. (Previously presented) The optical signal processing device of claim 13, wherein the wavelength varying non-linearly with the intensity of said light reaches a highest maximum at a wavelength in the range from ~~600 to 800 nm~~600 to 700 nm.

15. (Previously presented) The optical signal processing device of claim 14, wherein the wavelength varying non-linearly with the intensity of said light reaches a maximum at a wavelength in the range from ~~600 to 700 nm~~ 660 to 690 nm.

16. (Currently amended) An optical device comprising at least one photoluminescent carbon nanotube configured to emit, in response to an input of electromagnetic radiation, light over a range that includes wavelengths from 600 to 700 nm, wherein an intensity of emitted light reaches a highest maximum at a wavelength greater than or equal to 600 nm and less than or equal to 700 nm.

17. (Previously presented) The optical device of Claim 16 wherein the wavelengths vary non-linearly with intensity of the electromagnetic radiation

18. (Currently amended) The optical device of Claim 16 wherein the intensity of emitted light only decreases after the highest maximum intensity.

19. (Previously presented) The optical device of claim 16, wherein the at least one photoluminescent carbon nanotube is comprised in a component including a substrate and a layer on the substrate comprising the at least one photoluminescent carbon nanotube.

20. (Previously presented) The optical device of claim 19, wherein the component further comprises an intermediate layer between the substrate and the layer comprising the at least one photoluminescent carbon nanotube.

21. (Previously presented) The optical device of claim 16, wherein the electromagnetic radiation is monochromatic coherent laser light.

22. (New) The optical signal processing device of claim 1, wherein the optical signal processing operation comprises one of an optical switching operation, an optical amplification operation, an optical limiting operation and an optical logical operation.

23. (New) The optical signal processing component of claim 5, wherein the optical signal processing operation comprises one of an optical switching operation, an optical amplification operation, an optical limiting operation and an optical logical operation.